

# **Australian Bureau of Statistics**

# 6227.0 - Education and Work, Australia, May 2011

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# **Summary**

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#### **ABOUT THIS PUBLICATION**

This publication presents information about the educational experience and associated characteristics of persons aged 15 to 64 years and persons aged 65 to 74 years who are in the labour force or marginally attached to the labour force, especially in relation to their labour force status.

Statistics in this publication were collected in May 2011 as a supplement to the Australian Bureau of Statistics' (ABS) monthly Labour Force Survey (LFS).

Information collected in the survey includes: labour force characteristics; participation in education in the year prior to the survey, and in the survey month; type of educational institution; level of education of current and previous study; highest year of school completed; level of highest non-school qualification; level of highest educational attainment;

transition from education to work; enrolment experience; selected characteristics of apprentices and trainees; and unmet demand for apprenticeships and traineeships.

Information on the concepts and methods used in the survey, reliability of the results, definitions and interpretation are included in the Explanatory Notes, Technical Note and Glossary. Unless otherwise specified, differences between data items highlighted in the Summary of Findings are statistically significant (refer to paragraphs 14-16 of the Technical Note).

This release consists of Data Cubes in spreadsheet format only. An expanded range of statistics are available in the publication <u>Education and Work, Australia - Additional data cubes, May 2011 (First Issue) (cat. no. 6227.0.55.003)</u>.

#### ROUNDING

As estimates have been rounded, discrepancies may occur between the sum of component items and the published total. Published percentages are calculated prior to rounding and therefore some discrepancy may occur between these percentages and those that could be calculated from the rounded figures.

#### MORE INFORMATION ON EDUCATION STATISTICS

Information about Australian Bureau of Statistics' (ABS) activities in the education and training field is available from the Education and Training topic page on the ABS website. To access the topic page select 'People' under 'Topics @ a Glance' heading on the home page and then select 'Education and Training'.

#### **INQUIRIES**

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

#### **SUMMARY COMMENTARY**

# **Participation**



### PARTICIPATION

In May 2011, there were 14.8 million people aged 15-64 years (Table 2) and 323,600 people aged 65-74 years in the labour force or marginally attached to the labour force (Table 15) who were in the scope of the survey.

Of those aged 15-64 years, 2.9 million (20%) were enrolled in a course of study. Approximately 1.1 million (39%) of these enrolled people were attending a higher education

institution, 771,000 (27%) were at school, 599,900 (21%) were at Technical and Further Education (TAFE) institutions, and 410,100 (14%) were at other educational institutions (Table 1).

In May 2011, 53% of people aged 15-64 years enrolled in a course of study were female, 40% were aged 15-19 years, 64% were studying full-time, and 25% were born overseas (Table 1).

### STUDY FOR A QUALIFICATION

The proportion of people aged 15-64 years who were enrolled in formal learning (study that is likely to lead to a recognised qualification) increased from 17% in 2001 to 19% in 2011. For females aged 15-64 years, approximately 17% were enrolled in formal learning in 2001, compared with 20% in 2011. Male enrolments in formal learning were 17% in both 2001 and 2011 (Table 2).

Over one-third (39%) of people aged 15-64 years who were enrolled in a non-school qualification were studying for a Bachelor Degree. Almost half of these people (48%) were aged 20-24 years and 26% were aged 15-19 years. Of the 1.1 million females aged 15-64 years enrolled in a non-school qualification, 42% were completing a Bachelor Degree, compared with 37% of 926,500 males (Table 3).

More females than males were enrolled in most non-school qualifications, with the exception of Certificates III and IV. Over one-quarter (28%) of males enrolled in a non-school qualification were studying for a Certificate III or IV compared with 20% of females (Table 3).

As in 2010, the most commonly reported main field of education of current study for people aged 15-64 years enrolled in a non-school qualification in 2011 was Management and commerce (27%), followed by Society and culture (20%). One-fifth (21%) of males aged 15-64 years enrolled in a non-school qualification were studying in the main field of Engineering and related technologies, compared with 2% of females aged 15-64 years. Of the 400,100 people aged 15-64 years enrolled in the field of Society and culture, 69% were female (Table 4). People studying in the main field of Society and culture increased from 17% of persons aged 15-64 years enrolled in a non-school qualification in 2001 to 20% in 2011 (Table 7). Of the 109,300 people aged 15-64 years enrolled in the field of Architecture and building, 84% were males and over three-quarters (79%) of the 138,700 people enrolled in Education were females (Table 4).

# **Attainment**



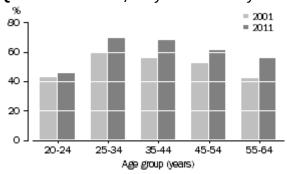
**ATTAINMENT** 

#### LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION

The proportion of people aged 15-64 years with a non-school qualification increased from 47% in May 2001 to 57% in May 2011, with the proportion of people with a Bachelor Degree or above increasing from 17% in May 2001 to 24% in May 2011. Over the same period the

proportion of people whose highest non-school qualification was an Advanced Diploma or below increased from 29% to 31%. The proportion of people aged 55-64 years with a non-school qualification increased from 42% in May 2001 to 56% in May 2011 (Table 8).

# PROPORTION OF PEOPLE AGED 20-64 YEARS WITH A NON-SCHOOL QUALIFICATION, May 2001 to May 2011



Among the 8.4 million people aged 15-64 years in May 2011 with a non-school qualification, the most commonly reported main fields of education for the highest non-school qualification were Management and commerce (2.0 million or 24%) and Engineering and related technologies (1.4 million or 17%). In May 2011, slightly more males than females aged 15-64 years had a non-school qualification (4.2 million and 4.1 million respectively) (Table 12).

#### LEVEL OF HIGHEST EDUCATIONAL ATTAINMENT

Almost one-third (29%) of people aged 15-64 years reported their level of highest educational attainment as Year 11 or below and 21% reported Year 12. Additionally, 17% had a Certificate III or IV and almost one in four (24%) had a highest level of attainment of Bachelor Degree or above. Compared with all Australian states and the Northern Territory, a higher proportion of people in the ACT reported Bachelor Degree and above levels of educational attainment. Two-fifths (40%) of people in the ACT had a Bachelor Degree or above as their highest level of educational attainment (Table 14).

In May 2011, of the 1.7 million people aged 65-74 years, 323,600 (19%) were in the labour force or marginally attached to the labour force. Of these, 22% had a Bachelor Degree or above. Almost two-fifths (38%) reported their level of highest educational attainment as Year 11 or below (Table 15).

# Transition from education to work



### TRANSITION FROM EDUCATION TO WORK

#### COMPLETING A NON-SCHOOL COURSE OF STUDY

In May 2011, there were 1.0 million people aged 15-64 years who had completed the non-school qualification in which they were enrolled in 2010. These people were more likely to

be employed in May 2011 than the rest of the population (81% compared with 75%) (Table 10 and Table 16).

#### **SCHOOL LEAVERS**

In May 2011, there were 319,900 people aged 15-24 years who were enrolled in secondary school in 2010 but were not in May 2011. Of these school leavers, 26% were employed and not studying. In 2011, 8% of school leavers aged 15-24 years were unemployed and not enrolled at a non-school institution with a further 9% not in the labour force and not enrolled at a non-school institution (Table 19).

# **Apprentices and trainees**



# APPRENTICES AND TRAINEES

In May 2011, there were 226,500 people aged 15-64 years who were employed as apprentices or trainees and part of the Australian Apprenticeship Scheme. Of these, 108,000 people (48%) had commenced their apprenticeship or traineeship in the last 12 months.

In 2011, the majority of apprentices or trainees (79%) were males. The highest number of apprentices and trainees, 60,300, were working within the Construction field of trade (Table 21).

There were 21,600 people who gained a place for an apprenticeship/traineeship but were not undertaking it in May 2011, while 36,400 people who applied for an apprenticeship/traineeship in 2011 were unsuccessful in gaining a place (Table 22).

# **Changes this issue**

#### **CHANGES THIS ISSUE**

Revisions have been made to the 2010 data presented in the 2011 Survey of Education and Work (SEW) release.

Estimates for 2010 have been compiled using population benchmarks that incorporate revisions made to Net Overseas Migration estimates, published in the September 2008 and September 2009 issues of <u>Australian Demographic Statistics</u> (cat. no. 3101.0). The revisions also include a correction to the population benchmarks for the 2010 SEW to align them with the survey scope for the Northern Territory (NT) in relation to Indigenous communities in very remote areas.

#### **IMPACT ON THE ESTIMATES**

The impact on the Australian estimates for SEW 2010 is minimal with the change mainly affecting the Northern Territory. While the change results in a reduction in the size of the Northern Territory population estimate it has a minor impact only on the distribution of characteristics. The number of people aged 15-64 years or 65-74 years in the labour force or marginally attached to the labour force in 2010 increased by 0.9% for Australia and decreased by 8.5% for the NT. However, revisions to the civilian population benchmarks were not uniform across age groups. The largest absolute average change was to those aged 20 to 24 years.

These revised benchmarks were used in the calculation of 2011 estimates making recent data comparable with revised 2010 SEW data.

# **Additional data**



An expanded range of statistics are available in the publication <u>Education and Work</u>, <u>Australia - Additional datacubes</u>, <u>May 2011</u> (cat. no. 6227.0.55.003). This publication includes data on key participation and attainment indicators in education and training.

# **About this Release**

Provides selected information on participation in education, highest educational attainment, transition from education to work and current labour force and demographic characteristics for the civilian population aged 15-64 years. Characteristics reported on include: type of educational institution attended or attending; level and main field of education of current study and highest level and main field of educational attainment. Information on unsuccessful enrolment, and deferment of study, is included for persons not studying in the survey year. Data on apprenticeships are also provided. Limited information is also included for persons aged 65-74 years who are in the labour force or marginally attached to it. Some of the statistical tables are presented in time series format.

This product includes Data Cubes and an expanded range of statistics in spreadsheet format available on the ABS website <a href="http://www.abs.gov.au">http://www.abs.gov.au</a>>.

# **History of Changes**

This document was added or updated on 01/03/2012.

01/03/2012 The Contents page has been updated to include a link to the publication

# **Explanatory Notes**

# **Explanatory Notes**

#### **EXPLANATORY NOTES**

#### INTRODUCTION

- **1** This publication contains results from the 2011 Survey of Education and Work (SEW) conducted throughout Australia in May 2011 as a supplement to the monthly Labour Force Survey (LFS). Respondents to the LFS who were in scope of the supplementary survey were asked further questions.
- **2** The SEW provides a range of key indicators of educational participation and attainment of persons aged 15-74 years, along with data on people's transition between education and work. The annual time series allows for ongoing monitoring of: people presently participating in education; level of highest non-school qualification; level of highest educational attainment; characteristics of people's transition between education and work; and data on apprentices.
- **3** The publication <u>Labour Force</u>, <u>Australia (cat. no. 6202.0)</u> contains information about survey design, sample redesign, scope, coverage and population benchmarks relevant to the monthly LFS, which also apply to supplementary surveys. It also contains definitions of demographic and labour force characteristics.

#### **CONCEPTS SOURCES AND METHODS**

**4** The conceptual framework used in Australia's LFS aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in <u>Labour Statistics</u>: Concepts, Sources and Methods, April 2007 (cat. no. 6102.0.55.001) which is available on the ABS website <a href="https://www.abs.gov.au">https://www.abs.gov.au</a>.

#### SCOPE

- **5** The scope of the SEW was restricted to persons aged 15-74 years who were usual residents of private dwellings and excluded:
  - members of the permanent defence forces
  - certain diplomatic personnel of overseas governments, customarily excluded from the Census and estimated resident population figures
  - overseas residents in Australia
  - members of non-Australian defence forces (and their dependants) stationed in Australia
  - persons who are permanently unable to work

- persons aged 65-74 years who are permanently not intending to work, or not in the labour force, or not marginally attached to the labour force
- special dwelling type institutionalised persons (e.g. patients in hospitals, residents of retirement homes, residents of homes for persons with disabilities, inmates of prisons)
- special dwelling type boarding school pupils.

**6** Boarding school pupils have been excluded from the scope of the SEW since 2005, but were included in earlier collections. The LFS in May 2011 yielded an estimate of 4,400 boarding school pupils aged 15 years and over who were excluded from the SEW.

**7** In 2009, persons aged 65-74 years who were in the labour force, or were marginally attached to the labour force, were interviewed for the first time for SEW. In May 2011 there were an estimated 323,600 persons aged 65-74 years in the labour force or marginally attached to the labour force, out of a total 1,661,900 persons aged 65-74 years. Persons were determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed, or
- were not actively looking for work but were available to start work within four weeks or could start work within four weeks.

**8** This supplementary survey was conducted in both urban and rural areas in all states and territories, but excluded people living in Indigenous communities in very remote parts of Australia. In 2009, persons who live in very remote areas that are not part of the Indigenous Community Frame (ICF) were interviewed for the first time for SEW. Nationally, approximately 0.5% of persons in scope of SEW in 2011 live in very remote areas that are not part of the ICF. In the Northern Territory, this proportion is 6%.

#### **COVERAGE**

**9** The estimates in this publication relate to persons covered by the survey in May 2011. In the LFS, coverage rules are applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey. See <u>Labour Force, Australia (cat. no. 6202.0)</u> for more details.

#### **DATA COLLECTION**

- **10** Information was mainly collected through interviews conducted over a two week period in May 2011. Interviews were conducted either face-to-face or over the telephone. Information was obtained from any responsible adult in the household who was asked to respond on behalf of all persons in the household in scope of the survey. All interviews were conducted using computer assisted interviewing (CAI).
- **11** Supplementary surveys are not always conducted using the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seven-eighths of the LFS sample.
- **12** Approximately 96% of the selected households were fully responding to the SEW, which resulted in around 39,800 completed interviews. In 2010 there was a complete reinstatement of the full LFS sample, following reductions due to budgetary reasons in 2009.

This resulted in an approximately 24% larger sample size for SEW in 2010 and 2011 compared with 2009. For more information see <u>Information Paper: Labour Force Sample Design, Nov 2007 (cat. no. 6269.0)</u>.

#### **ESTIMATION METHOD**

## Weighting

- **13** Weighting is the process of adjusting results from a sample survey to infer results for the total population. To do this, a 'weight' is allocated to each enumerated person. The weight is a value which indicates how many persons in the population are represented by the sample person.
- **14** The first step in calculating weights for each unit is to assign an initial weight, which is the inverse of the probability of the unit being selected in the survey. For example, if the probability of a person being selected in the survey was 1 in 300, then the person would have an initial weight of 300 (that is, they represent 300 people).

### **Population benchmarks**

- **15** The initial weights are then calibrated to align with independent estimates of the population, referred to as benchmarks. The population included in the benchmarks is the survey scope. This calibration process ensures that the weighted data conform to the independently estimated distribution of the population described by the benchmarks rather than to the distribution within the sample itself. Calibration to population benchmarks helps to compensate for over or under-enumeration of particular categories of persons which may occur due to either the random nature of sampling or non-response.
- **16** The survey was benchmarked to the estimated resident population (ERP) aged 15 to 74 years living in private dwellings and non-institutionalised special dwellings in each state and territory. People living in Indigenous communities in very remote parts of Australia were excluded.

#### **Estimation**

**17** Survey estimates of counts of persons are obtained by summing the weights of persons with the characteristics of interest.

#### **RELIABILITY OF THE ESTIMATES**

- **18** All sample surveys are subject to error which can be broadly categorised as either sampling or non-sampling error.
- **19** Sampling error is the difference between the published estimates, derived from a sample of persons, and the value that would have been produced if all persons in scope of the survey had been included. For more information refer to the Technical Note.
- **20** Non-sampling error may occur in any collection, whether it is based on a sample or a full count such as a census. Sources of non-sampling error include non-response, errors in reporting by respondents or recording answers by interviewers, and errors in coding and processing data. Every effort is made to reduce the non-sampling error by careful design

and testing of the questionnaire, training and supervision of interviewers, follow-up of respondents, and extensive editing and quality control procedures at all stages of data processing.

#### **SEASONAL FACTORS**

**21** The estimates are based on information collected in the survey month, and due to seasonal factors they may not be representative of other months of the year.

#### **DATA QUALITY**

**22** Information recorded in this survey is essentially 'as reported' by respondents and hence may differ from that which might be obtained from other sources or via other methodologies. This factor should be considered when interpreting the estimates in this publication.

#### **DATA COMPARABILITY**

### **Comparability of time series**

- **23** Supplementary surveys are not always conducted on the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seveneighths of the LFS sample. Since it was introduced, this survey has been conducted on various proportional samples and therefore sampling errors associated with previous supplementary surveys may vary from the sampling error for this survey.
- **24** Since 2005, boarding school pupils have been excluded from the scope of the SEW, but they were included in earlier collections. For more details, see paragraph 6 of the Explanatory Notes.
- **25** Since 2007, industry data in the SEW are classified according to the <u>Australian and New Zealand Standard Industrial Classification</u>, 2006 (cat. no. 1292.0). Industry data prior to this were classified according to the <u>Australian and New Zealand Standard Industrial Classification</u>, 1993 (cat. no. 1292.0). Therefore, industry data from SEW prior to 2007 are not directly comparable to 2009 industry data.
- 26 Since 2007, occupation data in the SEW are classified according to the <u>Australia and New Zealand Standard Classifications of Occupations</u>, First Edition, 2006 (cat.no. 1220.0). Occupation data prior to this were classified according to the <u>Australia Standard Classifications of Occupations</u>, Second Edition, 1997 (cat.no. 1220.0). Therefore, occupation data from SEW prior to 2007 are not directly comparable to 2009 occupation data.
- 27 Prior to 2008, only persons aged 15-54 years were included in the apprenticeship/traineeship survey questions. In 2008, the age scope was extended to include persons aged 55-64 years for these questions. In 2009, the age scope was further extended to include persons aged 65-74 years for these questions. In 2008, the definition for apprentices and trainees changed from those employed as apprentices/trainees to include only those with a formal contract under the **Australian Apprenticeship Scheme**. Therefore data on apprentices from previous years are not directly comparable to 2008 and subsequent data. Note that **Australian School-based Apprenticeships** are excluded.
- 28 Revisions are made to population benchmarks for the LFS after each five-yearly Census

of Population and Housing. The last such revision was made in February 2009 to take account of the results of the **2006 Census of Population and Housing.** Estimates from supplementary surveys conducted from and including 2009 are therefore based on these 2006 population benchmarks.

# **Comparisons with other ABS surveys**

- 29 Since the SEW is conducted as a supplement to the LFS, data items collected in the LFS are also available. However, there are some important differences between the two surveys. The SEW sample is a subset of the LFS sample (see Paragraph 1 of these Explanatory Notes) and the SEW had a response rate of 96% which is lower than the LFS response rate for the same period of 97%. Due to these differences between the samples, the SEW data are weighted as a separate process to the weighting of LFS data. Differences may therefore be found in the estimates collected in the LFS and published as part of the SEW when compared with estimates published in the May 2011 issue of <a href="Labour Force">Labour Force</a>, <a href="Australia (cat. no. 6202.0)</a>.
- **30** Additionally, estimates from the SEW may differ from the estimates produced from other ABS collections, for several reasons. The SEW is a sample survey and its results are subject to sampling error. Results may differ from other sample surveys, which are also subject to sampling error. Users should take account of the relative standard errors (RSEs) on estimates and those of other survey estimates where comparisons are made.
- **31** Differences may also exist in the scope and/or coverage of the SEW compared to other surveys. Differences in estimates, when compared to the estimates of other surveys, may result from different reference periods reflecting seasonal variations, non-seasonal events that may have impacted on one period but not another, or because of underlying trends in the phenomena being measured.
- **32** Finally, differences can occur as a result of using different collection methodologies. This is often evident in comparisons of similar data items reported from different ABS collections where, after taking account of definition and scope differences and sampling error, residual differences remain. These differences are often the result of the mode of the collections, such as whether data are collected by an interviewer or self-enumerated by the respondent and whether the data are collected from the person themselves or from a proxy respondent. Differences may also result from the context in which questions are asked, i.e. where in the interview the questions are asked and the nature of preceding questions. The impacts on data of different collection methodologies are difficult to quantify. As a result, every effort is made to minimise such differences.

#### **CLASSIFICATIONS**

# **Country of birth**

**33** Country of birth data are classified according to the <u>Standard Australian Classification of Countries (SACC) 1998 (Revision 2.03) (cat. no. 1269.0)</u>.

#### **Industry**

**34** Industry data are classified according to the <u>Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).</u>

# Occupation

**35** Occupation data are classified according to the <u>Australia and New Zealand Standard</u> Classifications of Occupations (ANZSCO), First Edition, 2006 (cat.no. 1220.0).

#### **Education**

- **36** Education data are coded to the <u>Australian Standard Classification of Education</u>, <u>2001</u> (<u>cat. no. 1272.0</u>). The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications: Level of Education and Field of Education.
- **37** Level of Education is defined as a function of the quality and quantity of learning involved in an educational activity. There are nine broad levels, 15 narrow levels and 64 detailed levels. For definitions of these levels see the <u>Australian Standard Classification of Education, 2001 (cat. no. 1272.0)</u>.
- **38** Field of Education is defined as the subject matter of an educational activity. Fields of education are related to each other through the similarity of subject matter, through the broad purpose for which the education is undertaken, and through the theoretical content which underpins the subject matter. There are 12 broad fields, 71 narrow fields and 356 detailed fields. For definitions of these fields see the Australian Standard Classification of Education, 2001 (cat. no. 1272.0).

#### LEVEL OF HIGHEST EDUCATIONAL ATTAINMENT

- **39** Level of highest educational attainment was derived from information on highest year of school completed and level of highest non-school qualification. The derivation process determines which of the 'non-school' or 'school' attainments will be regarded as the highest. Usually the higher ranking attainment is self-evident, but in some cases some secondary education is regarded, for the purposes of obtaining a single measure, as higher than some certificate level attainments.
- **40** The following decision table is used to determine which of the responses to questions on highest year of school completed (coded to ASCED Broad Level 6) and level of highest non-school qualification (coded to ASCED Broad Level 5) is regarded as the highest. It is emphasised that this table was designed for the purpose of obtaining a single value for level of highest educational attainment and is not intended to convey any other ordinality.

Decision Table: Level of Highest Educational Attainment (ASCED level of education codes)							
Highest year of school completed	Level of highest non-school qualification						
	Certificate n.f.d. (500)	Certificate III or Win.f.d. (510)	Certificate IV (511)	Certificate III (514)	Certificate For Iln.f.d. (520)	Certificate II (521)	Certificate I (524)
Secondary Education n.f.d. (600)	Secondary Education n.f.d.	Certificate III or Min.f.d.	Certificate IV	Certificate III	Certificate For II	Certificate II	Certificate I
Senior Secondary Education n.f.d. (610)	Senior Secondary n.f.d.	Certificate III or Min.f.d.	Certificate IV	Certificate III	Senior Secondary n.f.d.	Senior Secondary n.f.d.	Senior Secondary n.f.d.
Year 12 (611)	Year 12	Certificate III or Min.f.d.	Certificate IV	Certificate III	Year12	Year 12	Year 12
Year 11 (613)	Year 11	Certificate III or M n.f.d.	Certificate IV	Certificate III	Year 11	Year 11	Year 11
Junior Secondary Education n.f.d. (620)	Junior Secondary Education n.f.d.	Certificate III or V n.f.d.	Certificate IV	Certificate III	Certificate Lor II n.f.d.	Certificate II	Certificate I
Year 10 (621)	Year 10	Certificate III or Min.f.d.	Certificate IV	Certificate III	Year 10	Year 10	Year 10
Year 9 (622)	Year9	Certificate III or Min.f.d.	Certificate IV	Certificate III	Certificate Lor II n.f.d.	Certificate II	Certificate I
Year 8 (623)	Year 8	Certificate III or IV n.f.d.	Certificate IV	Certificate III	Certificate I or II n.f.d.	Certificate II	Certificate I
Year 7 (524)	Year 7	Certificate III or IV n.f.d.	Certificate IV	Certificate III	Certificate I or II n.f.d.	Certificate II	Certificate I

**41** The decision table is also used to rank the information provided in a survey about the qualifications and attainments of a single individual. It does not represent any basis for comparison between differing qualifications. For example, a person whose highest year of school completed was Year 12, and whose level of highest non-school qualification was a Certificate III, would have those responses crosschecked on the decision table and would as a result have their level of highest educational attainment output as Certificate III. However, if the same person answered 'certificate' to the highest non-school qualification question, without any further detail, it would be crosschecked against Year 12 on the decision table as Certificate not further defined. The output would then be Year 12. The decision table, therefore, does not necessarily imply that one qualification is 'higher' than the other. For more details, see <a href="Education Variables">Education Variables</a>, <a href="2002">2002</a> (cat. no. 1246.0).

#### LEVEL OF EDUCATION OF CURRENT STUDY

**42** Level of education of current study is derived using the decision table displayed above, taking into account Level of education of school study in current year and Level of education of non-school study in current year for persons who are undertaking concurrent qualifications.

#### **PRODUCTS AND SERVICES**

**43** For users who wish to undertake more detailed analysis of the survey data, a basic confidentialised unit record data file (CURF) is released every two years. A CURF will be released for the 2011 survey and is proposed to be available in mid 2012. Further

information about these files, including details of how they can be obtained and conditions of use, will be available on the ABS website <a href="https://www.abs.gov.au">https://www.abs.gov.au</a>>.

**44** Special tabulations are available on request. Subject to confidentiality and sampling variability constraints, tabulations can be produced from the survey incorporating data items, populations and geographic areas selected to meet individual requirements. These can be provided in printed or electronic form.

#### **ACKNOWLEDGMENT**

**45** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

### **PREVIOUS SURVEYS**

**46** Results of similar surveys have been published in previous issues. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978, and annually in May since 1979. Results of previous surveys were published in <u>Transition from Education to Work, Australia (cat. no. 6227.0)</u> from 1964 to 2001. Since May 2002, the results of the survey have been published in <u>Education and Work, Australia (cat. no. 6227.0)</u>.

#### **CHANGES THIS ISSUE**

**47** Revisions have been made to the 2010 data presented in the 2011 Survey of Education and Work (SEW) release.

**48** Estimates for 2010 have been compiled using population benchmarks that incorporate revisions made to Net Overseas Migration estimates, published in the September 2008 and September 2009 issues of <u>Australian Demographic Statistics</u> (cat. no. 3101.0). The revisions also include a correction to the population benchmarks for the 2010 SEW to align them with the survey scope for the Northern Territory (NT) in relation to Indigenous communities in very remote areas.

#### **IMPACT ON THE ESTIMATES**

**49** The impact on the Australian estimates for SEW 2010 is minimal with the change mainly impacting on Northern Territory estimates. While the change results in a reduction in the size of the Northern Territory population estimate it has a minor impact only on the distribution of characteristics. The number of people aged 15-64 years or 65-74 years in the labour force or marginally attached to the labour force in 2010 increased by 0.9% for Australia and decreased by 8.5% for the NT. However, revisions to the civilian population benchmarks were not uniform across age groups. The largest absolute average change was to those aged 20 to 24 years.

**50** These revised benchmarks were used in the calculation of 2011 estimates making recent data comparable with revised 2010 SEW data.

#### **NEXT SURVEY**

**51** The ABS intends to conduct this survey again in May 2012.

#### **RELATED PUBLICATIONS**

52 Refer to the Related Information tab for other ABS publications which may be of interest.

**53** Current publications and other products released by the ABS are available from the ABS website <a href="https://www.abs.gov.au">https://www.abs.gov.au</a>. The ABS also issues a daily upcoming release advice on the website that details products to be released in the week ahead. The Education and Training Topics @ a Glance page also contains a wealth of information and useful references. This site can also be accessed through the ABS website.

# **Glossary**

#### **GLOSSARY**

### **Apprentice**

An apprentice is a person aged 15-64 years who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training for the purpose of attaining tradesperson status in a recognised trade. In this survey, apprentices are identified by their answer to a question specifically pertaining to the **Australian Apprenticeship Scheme**. Note that **Australian School-based Apprenticeships** are excluded.

### **Australian Standard Classification of Education (ASCED)**

The ASCED is a national standard classification which includes all sectors of the Australian education system: that is, schools, vocational education and training, and higher education. From 2001, ASCED replaced a number of classifications used in administrative and statistical systems, including the ABSCQ. The ASCED comprises two classifications: Level of education and Field of education. See <u>Australian Standard Classification of Education</u>, 2001 (cat. no. 1272.0).

#### Balance of state/territory

Comprises the balance of Australia not included in Capital City.

### **Capital city**

Comprises the Australian Capital Territory, the Major Statistical Regions of Sydney, Melbourne, Brisbane, Adelaide and Perth and the Statistical Divisions of Greater Hobart and Darwin.

#### Certificate not further defined

Survey responses are coded to Certificate not further defined (n.f.d.) when there is not

enough information to code them to Certificate I, II, III or IV in the <u>Australian Standard</u> Classification of Education, 2001 (cat. no. 1272.0), Level of education classification.

### Completed

The completion of all academic requirements for the conferring of an award from an institution.

# **Completers**

Persons aged 15-64 years who by May had completed the non-school qualification in which they were enrolled in the previous year.

# **Country of birth**

Country of birth has been classified according to the <u>Standard Australian Classification of Countries (SACC)</u>, 1998 (Revision 2.03) (cat. no. 1269.0).

#### **Educational institution**

Any institution whose primary role is education. Schools, higher education establishments, colleges of technical and further education, public and private colleges, etc are included. Institutions whose primary role is not education are excluded.

# **Employed**

Persons who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers)
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers)
- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week
  - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week
  - away from work as a standard work or shift arrangement
  - on strike or locked out
  - on workers' compensation and expected to return to their job, or
- were employers or own account workers who had a job, business or farm, but were not at work.

### **Employed full time**

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

#### **Employed part time**

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

#### **Enrolled**

Refers to persons registered for a course of study in the particular reference period (e.g. survey month, or previous calendar year) at an educational institution (as defined).

#### Field not determined

Field not determined includes inadequately described responses or where no responses were given.

#### Field of education

Field of education is defined as the subject matter of an educational activity. It is categorised according to the <u>Australian Standard Classification of Education</u>, <u>2001</u> (cat. no. 1272.0) Field of education classification. This publication presents the main field of education studied.

#### Field of trade

Refers to the occupation of an apprentice and is classified according to the <u>Australian and New Zealand Standard Classification of Occupations (ANZSCO)</u>, <u>First Edition</u>, <u>2006 (cat. no. 1220.0)</u> Unit Group.

# **Formal Learning**

Refers to learning which is structured, taught in institutions and organisations and leads to a recognised qualification issued by a relevant body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. A learning activity is formal if it leads to a learning achievement that is possible to position within the Australian Qualification Framework (AQF) and includes workplace training if such training results in a qualification.

### **Higher education institution**

An Australian institution providing higher education courses, e.g. universities; colleges of advanced education; institutes of advanced education; institutes of higher education; institutes of tertiary education; agricultural colleges and some institutes of technology.

#### Index of relative socio-economic disadvantage

This is one of four Socio-economic Indexes for Areas (SEIFAs) compiled by the ABS following each Census of Population and Housing, from various characteristics of persons resident in particular areas. The Index of Disadvantage summaries attributes such as income, educational attainment, unemployment and occupation skill levels. The index refers to the area (the Census Collector's District) in which a person lives, not to the socio-economic situation of the particular individual. The index used in this publication were those compiled following the 2006 Census. For further information about the indexes, see Information Paper: An Introduction to Socio-Economic Indexes for Areas (SEIFA), 2006 (cat. no. 2039.0).

# Industry

Industry data is classified according to the <u>Australian and New Zealand Standard Industrial</u> <u>Classification (ANZSIC), 2006 (cat. no. 1292.0)</u>.

#### Leavers

Persons who were enrolled in a course of study for a qualification in the previous year, but were not enrolled in any course of study for a qualification at the time of the survey.

#### Level of education

Level of education is a function of the quality and quantity of learning involved in an educational activity. It is categorised according to the <u>Australian Standard Classification of Education</u>, 2001 (cat. no. 1272.0) Level of education classification.

### Level of highest educational attainment

Level of highest educational attainment identifies the highest achievement a person has attained in any area of study. It is not a measurement of the relative importance of different fields of study but a ranking of qualifications and other educational attainments regardless of the particular area of study or the type of institution in which the study was undertaken. See paragraphs 20-22 of the Explanatory Notes for how highest level is derived.

#### Level not determined

Level not determined includes inadequately described responses or where no responses were given.

### Marginal attachment to the labour force

People who were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed, or
- were not actively looking for work but were available to start work within four weeks.

The criteria for determining those in the labour force are based on activity (i.e. working or looking for work) and availability to start work during the reference week. The criteria associated with marginal attachment to the labour force, in particular the concepts of wanting to work and reasons for not actively looking for work, are more subjective. Hence, the measurement against these criteria is affected by the respondent's own interpretation of the concepts used. An individual respondent's interpretation may be affected by their work aspirations, as well as family, economic and other commitments.

### **Non-formal learning**

Non-formal learning refers to structured taught learning, but differs from formal learning in that it does not lead to a qualification within the AQF. It includes non-accredited workplace training, that is, training that does not lead to a recognised qualification.

Some examples of types of non-formal courses include:

- adult education courses (eg. introduction to computing)
- hobby and recreation courses (eq. ceramics, jewellery making, dancing)
- personal enrichment courses (eg. personal finance, sport instruction, public speaking)
- work-related courses (eg. manager development, job search training, induction courses)

- first aid courses
- bridging courses
- statement of attainment.

#### Non-school educational institution

An educational institution, other than a secondary school. This includes higher education establishments, colleges of technical and further education, public and private colleges, etc. Institutions excluded are those whose primary role is not education.

### Non-school qualification

Non-school qualifications are awarded for educational attainments other than those of preprimary, primary or secondary education. They include qualifications at the Postgraduate Degree level, Master Degree level, Graduate Diploma and Graduate Certificate level, Bachelor Degree level, Advanced Diploma and Diploma level, and Certificates I, II, III and IV levels. Non-school qualifications may be attained concurrently with school qualifications.

#### Not in labour force

Persons who were not in the categories 'employed' or 'unemployed' (as defined).

## Occupation

Occupation data is classified according to the <u>Australian Standard Classification of</u> Occupations, First Edition, 2006 (cat. no. 1220.0).

#### Other educational institution

Includes institutions or establishments that offer educational courses such as industry skills centres, professional or industry associations, equipment/product manufacturers or suppliers, and instances where insufficient information was available to determine the type of educational institution.

#### **Qualification**

Formal certification, issued by a relevant approved body, in recognition that a person has achieved an appropriate level of learning outcomes or competencies relevant to identified individual, professional, industry or community needs. Statements of attainment awarded for partial completion of a course of study at a particular level are excluded.

#### Reference week

The week preceding the week in which the interview was conducted.

#### **School**

An educational institution whose major activity is the provision of formal classes of primary or secondary education, or the provision of primary or secondary distance education.

#### **School leavers**

Persons aged 15-24 years who attended school in the previous year but were not attending school prior to May of the survey year.

### Study for a qualification

The reported level of education of any study being undertaken that will lead to formal certification, issued by a relevant approved body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. In this survey, if the respondent was still attending school their level of study was recorded as their current year of schooling. If the respondent had left school and was enrolled in study for a qualification they were asked the level of the qualification.

#### **TAFE**

A Technical and Further Education institution. In Victoria this may also be interpreted as Training and Further Education.

# Unemployed

Persons who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and were available for work in the reference week, or
- were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

# **Abbreviations**

#### **ABBREVIATIONS**

ABS Australian Bureau of Statistics

ABSCQ Australian Bureau of Statistics Classification of Qualifications

ANZSCO Australian and New Zealand Standard Classification of Occupations

ANZSIC Australian and New Zealand Standard Industrial Classification

AQF Australian Qualifications Framework

ASCED Australian Standard Classification of Education

CURF confidentialised unit record file ICF Indigenous Community Frame

ISO International Organization for Standardization

LFS Labour Force Survey n.f.d. not further defined relative standard error

SACC Standard Australian Classification of Countries

SE standard error

SEIFA Socio-Economic Indexes for Areas SEW Survey of Education and Work TAFE Technical and Further Education

UN United Nations

# **Quality Declaration - Summary**

# **QUALITY DECLARATION - SUMMARY**

### INSTITUTIONAL ENVIRONMENT

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

#### **RELEVANCE**

The Education and Work survey provides annual information about a range of key indicators relating to the educational participation and attainment along with data on people's transition between education and work for all persons aged 15 to 64 years and persons aged 65 to 74 who are employed or marginally attached to the labour force.

As a result of this survey being supplementary to the Labour Force Survey (LFS), persons excluded from the LFS were also excluded from this survey (see Explanatory Notes of Labour Force, Australia (cat. no. 6202.0) for standard LFS exclusions). Additional exclusions from this survey were: persons aged 75 or older; persons aged 65-74 years who are not intending to work, or not in the labour force, or not marginally attached to the labour force; persons permanently unable to work; institutionalised persons; and boarding school pupils. Very remote areas, excluding Indigenous communities, were included for the first time in 2009.

The type of information collected included: participation in education in the year prior to the survey, and in the survey month; labour force characteristics; type of educational institution; level of education of current and previous study; highest year of school completed; level and main field of highest non-school qualification; transition from education to work; unmet demand for education; and selected characteristics of apprentices.

The <u>Australian Classification of Education (ASCED) (cat. no. 1272.0)</u> was used to classify education. The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications: Level of Education and Field of Education.

#### **TIMELINESS**

The most recent Education and Work survey was conducted throughout Australia in May 2011 as a supplement to the monthly LFS. The ABS has been conducting similar surveys since 1964. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978 and annually in May since 1979. Data from the survey are released approximately six months after they have been collected.

#### **ACCURACY**

The number of completed interviews (after taking into account scope and coverage exclusions) was about 39,800. This sample was achieved by obtaining a response rate of 96% from the selected households.

The Labour Force Survey is designed to primarily provide estimates for the whole of Australia and, secondly, for each state and territory.

Two types of error are possible in an estimate based on a sample survey: non-sampling error and sampling error.

Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. Non-sampling error arises because information cannot be obtained from all persons selected in the survey.

Sampling error occurs because a sample, rather than the entire population is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey and about nineteen chances in twenty that the difference will be less than two standard errors.

Every 5 years, following the availability of data from the Census of Population and Housing, the ABS reviews the LFS sample design. As a result of the review following the 2006 Census, the new sample design, implemented over the period November 2007 to June 2008, resulted in a smaller sample size from July 2008. For more information see Information Paper: Labour Force Sample Design, Nov 2007 (cat. no. 6269.0)

#### **COHERENCE**

The ABS seeks to maximise consistency and comparability over time by minimising changes to the survey; sound survey practice requires ongoing development to maintain the integrity of the data. No changes were made to the survey between 2009 and 2011.

In 2009 the scope of the survey was extended to include persons aged 65 to 74 years who are employed or marginally attached to the labour force. Persons are determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and: were actively looking for work but did not meet the availability criteria to be classified as unemployed; or were not actively looking for work but were available to start work within four weeks or could start work within four weeks if child care was available. To maintain comparability between years, the extra persons were not included in most of the tables. A separate table has been included.

Prior to 2009 all persons in very remote areas were excluded from SEW. Very remote areas represent about 2% of the total Australian and 20% of the Northern Territory population. From 2009 onwards SEW has a slightly wider scope, and excludes only persons in Indigenous communities in very remote areas. The current exclusion has only a minor impact on national estimates or estimates by state/territory except for the Northern Territory where such persons account for about 15% of the population.

#### **INTERPRETABILITY**

Detailed information on the terminology, classifications and other technical aspects associated with the Survey of Education and Work can be found in the relevant web pages included with this release.

#### **ACCESSIBILITY**

Tabulated data and associated RSEs are available in spreadsheet format on the website. Extra tables are also included on the website and usually available at the time of initial data release in the publication Education and Work, Australia - Additional data cubes, May 2011 (First Issue) (cat. no. 6227.0.55.003).

A Confidentialised Unit Record File (CURF) containing confidentialised microdata from the Survey of Education and Work will be released for 2011 data. A CURF has been released biennially for this survey since 2001. The CURF facilitates interrogation and analysis of survey data. For further details refer to the ABS website <a href="https://www.abs.gov.au">https://www.abs.gov.au</a>.

Data are also available on request. Note that detailed data can be subject to high relative standard errors which in some cases may result in data being confidentialised.

For further information about these or related statistics, contact the National Information and Referral Service on 1300 135 070.

# **Data quality (Technical Note)**

# **TECHNICAL NOTE DATA QUALITY**

#### **RELIABILITY OF THE ESTIMATES**

1 Since the estimates in this publication are based on information obtained from a sample, they are subject to sampling variability. That is, they may differ from those estimates that would have been produced if all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings (or households) was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all dwellings had been included, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

**2** Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

$$RSE\% = \left(\frac{SE}{estimate}\right) \times 100$$

**3** RSEs for the 2011 Survey of Education and Work (SEW) have been calculated using the Jackknife method of variance estimation. This involves the calculation of 30 'replicate' estimates based on 30 different sub samples of the obtained sample. The variability of

estimates obtained from these subsamples is used to estimate the sample variability surrounding the estimate.

**4** RSEs of all of the estimates in this publication are included in the Data Cubes released as part of the publication and available from the Downloads tab of the publication.

**5** Tables 2, 7, 8, 21 and 22 contain estimates collected from previous Education and Work surveys. The spreadsheets associated with this release contain RSEs for these estimates. The RSEs for the years 2001 and 2003 were calculated using the previous statistical SE models, which are available from each relevant issue of Education and Work, Australia (cat. no. 6227.0) available on the ABS website <a href="https://www.abs.gov.au">https://www.abs.gov.au</a>. For the 2005, and later data, the RSEs were directly calculated for each separate estimate. This method differs from that presented in the 2005 publication, which describes using statistical SE models to calculate RSEs for all time points. While the direct method is more accurate, the difference between the two is usually not significant for most estimates.

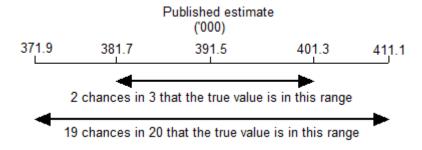
**6** In this publication, only estimates (numbers and proportions) with RSEs less than 25% are considered sufficiently reliable for most purposes. Estimates with RSEs between 25% to 50% have been included and are preceded by an asterisk (e.g. \*1.3) to indicate they are subject to high sample variability and should be used with caution. Estimates with RSEs greater than 50% are preceded by a double asterisk (e.g. \*\*0.6) to indicate that they are considered too unreliable for general use.

#### CALCULATION OF STANDARD ERROR

**7** Standard errors can be calculated using the estimates (counts or proportions) and the corresponding RSEs. For example, Table 1 shows the estimated number of females in Victoria enrolled in a course of study was 391,500. The RSE Table corresponding to the estimates in Table 1 (included in the Data Cubes) shows the RSE for this estimate is 2.5%. The SE is calculated by:

SE of estimate = 
$$\left(\frac{RSE}{100}\right) \times estimate$$
  
= 0.025 ×391,500  
= 9,800 (rounded to nearest 100)

**8** Therefore, there are about two chances in three that the actual number of females in Victoria enrolled in a course of study was in the range of 381,700 to 401,300 and about 19 chances in 20 that the value was in the range 371,900 to 411,100. This example is illustrated in the diagram below:



#### PROPORTION AND PERCENTAGES

**9** Proportions and percentages formed from the ratio of two estimates are also subject to

sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. This formula is only valid when the numerator is a subset of the denominator.

$$RSE(\frac{x}{y}) = \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

10 As an example, using estimates from Table 1, of the 751,400 persons enrolled in a course of study in Victoria, 47.9%, that is, 359,900 are males. The RSE for 751,400 is 1.8% and the RSE for 359,900 is 2.4% (see Table 1 Relative Standard Errors). Applying the above formula, the RSE for the proportion of males in Victoria enrolled in a course of study is:

$$RSE = \sqrt{(2.4)^2 - (1.8)^2} = 1.6\%$$

**11** Therefore, the SE for the proportion of males in Victoria enrolled in a course of study is 0.8 percentage points (=(1.6/100) x 47.9). Hence, there are about two chances in three that the proportion of males in Victoria enrolled in a course of study is between 47.1% and 48.7%, and 19 chances in 20 that the proportion is between 46.3% and 49.5%.

#### **DIFFERENCES**

**12** Published estimates may also be used to calculate the difference between two survey estimates (of numbers or proportions). Such an estimate is also subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE(x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**13** While this formula will only be exact for differences between separate and uncorrelated characteristics or sub populations, it provides a good approximation for the differences likely to be of interest in this publication.

#### SIGNIFICANCE TESTING

**14** A statistical significance test for any comparisons between estimates can be performed to determine whether it is likely that there is a difference between two corresponding population characteristics. The standard error of the difference between two corresponding estimates (x and y) can be calculated using the formula in paragraph 11. This standard error is then used to calculate the following test statistic:

$$\left(\frac{x-y}{SE(x-y)}\right)$$

- **15** If the value of this test statistic is greater than 1.96 then there is evidence, with a 95% level of confidence, of a statistically significant difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a real difference between the populations with respect to that characteristic.
- **16** The imprecision due to sampling variability, which is measured by the SE, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents and recording by interviewers, and errors made in coding and processing data. Inaccuracies of this kind are referred to as non-sampling error, and they occur in any

enumeration, whether it be a full count or sample. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and efficient operating procedures.

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